Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (canceled)
2. (canceled)
3. (canceled)
4. (previously canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (canceled)
12. (canceled)
13. (previously canceled)
14. (canceled)

15. (previously amended) A directional antenna configured to broadcast a signal from an input line having a core and shielding, comprising:
    a) a conductive base plate, operatively interconnected to the shielding of the input line;
    b) a substantially solid, cylindrical dielectric rod, mounted on the base plate;
    c) a single, unidirectional conductive helix, wrapped around an outer surface of the dielectric rod, having a pitch angle of at least 12 degrees; and
    d) a strip line matching network, attached between the core of the input line and the conductive helix, which tapers from a maximum width at a connection point on the input line to a minimum width at a connection point with the conductive helix, wherein the matching network is configured to match an impedance of the conductive helix with an impedance of the input line.

16. (previously amended) A directional antenna as in claim 15, wherein a length of the strip line matching network is ¼ of signal wavelength.

17. (previously amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to the shape of a curved side of the dielectric rod.

18. (previously amended) A directional antenna as in claim 15, wherein the strip line matching network conforms to the shape of a curved side of the dielectric rod, and forms a triangularly shaped matching network.

19. (previously amended) A directional antenna as in claim 15, wherein a side of the strip line matching network conforms to the shape of a curved side of the dielectric rod, and forms a crescent shaped matching network.

20. (original) A directional antenna as in claim 15, wherein the strip line matching network tapers along a linear axis to form a matching network.

21. (previously amended) A directional antenna as in claim 15, wherein the strip line matching network tapers from a maximum width of approximately one radius of the dielectric rod to a minimum width approximately equal to a diameter of wire forming the helix.

22. (canceled)

23. (canceled)

24. (canceled)

25. (previously added) A directional antenna as in claim 15, wherein the matching network is substantially parallel to the base plate.

26. (previously added) A directional antenna as in claim 15, wherein the matching network is configured to match a higher impedance of the conductive helix with a lower impedance of the input line.

27. (new) A directional antenna as in claim 15, wherein the dielectric rod is of materials selected from the group consisting of acetal resin, acrylic, and nylon.

28. (new) A directional antenna as in claim 27, wherein the acetal resin dielectric rod is Delrin.

29. (new) A directional antenna as in claim 15, further comprising a plastic layer between the conductive base plate and the matching network.

30. (new) A directional antenna as in claim 15, further comprising a dielectric enclosure attached to the base plate and enclosing the dielectric rod, the conductive helix, and the matching network, wherein the dielectric enclosure enhances an output of the helical antenna.

31. (new) A directional antenna as in claim 15, wherein the strip line matching network provides a substantially flat transmission response over a spectrum of frequencies.

32. (new) A directional antenna as in claim 15, wherein the number of turns of the conductive helix is selected from the group consisting of 5, 10 and 15 turns.